WHAT IS CLAIMED IS:

1. A parts mounting and assembling apparatus comprising:

a base unit including:

a body containing a device to be used in common among a plurality of processes for mounting and assembling parts;

a conveying mechanism for conveying a workpiece, which is an object of mounting and assembling, on said body in a predetermined conveying direction along a manufacturing line; and

a positioning mechanism for placing said workpiece at a predetermined position in said predetermined conveying direction;

a dedicated unit including an end effector for conducting processing on said workpiece or a part to be mounted on said workpiece, according to each of said processes; and

a selected mechanism unit including a moving mechanism for moving said end effector in two axial directions perpendicular to said predetermined conveying direction in each of said processes to adjust a relative position between said end effector and said workpiece or said part for positioning,

said moving mechanism being selected from a plurality of types according to the contents of each of said processes to be interchangeably attached as said selected mechanism unit with respect to said base unit, and

said end effector being selected from a plurality of types according to the contents of each of said processes to be interchangeably attached as said dedicated unit with respect to said moving mechanism.

2. A parts mounting and assembling apparatus according to claim 1, wherein said selected mechanism unit further includes an aligner mechanism for adjusting a horizontal position of said workpiece or part to be introduced into said manufacturing line by said end effector or adjusting a horizontal position of said workpiece taken out from said manufacturing line by said end effector, with said aligner mechanism being selected from a plurality of types according to the contents of each of said processes to be interchangeably attached as said selected mechanism unit with respect to said base unit, and

said dedicated unit further includes a fixing mechanism for fixing said workpiece or said part at a predetermined position on said aligner mechanism, with said fixing mechanism being selected from a plurality of types according to the contents of each of said processes to be interchangeably attached as said dedicated unit with respect to said aligner mechanism.

3. A parts mounting and assembling apparatus according to claim 1, wherein said parts mounting and assembling apparatus is made to be connectable to parts mounting and

assembling apparatuses for other processes in said predetermined conveying direction and, at the connection with the other-process parts mounting and assembling apparatuses, said conveying mechanism is made to deliver said workpiece to a conveying mechanism of the other-process parts mounting and assembling apparatus adjacent to said parts mounting and assembling apparatus.

4. A parts mounting and assembling apparatus according to claim 2, wherein said parts mounting and assembling apparatus is made to be connectable to parts mounting and assembling apparatuses for other processes in said predetermined conveying direction and, at the connection with the other-process parts mounting and assembling apparatuses, said conveying mechanism is made to deliver said workpiece to a conveying mechanism of the other-process parts mounting and assembling apparatus adjacent to said parts mounting and assembling apparatus.

5. A parts mounting and assembling apparatus according to claim 3, wherein, as said conveying mechanism, two conveying mechanisms are disposed in parallel with each other in the form of two lines on said base unit, one conveying mechanism is made to convey a pallet, on which said workpiece is placed, to said other-process parts mounting and assembling apparatus adjacent thereto in said predetermined conveying direction, and the other conveying

mechanism is made to convey only said pallet to said other-process parts mounting and assembling apparatus adjacent thereto in a direction opposite to said predetermined conveying direction.

6. A parts mounting and assembling apparatus according to claim 4, wherein, as said conveying mechanism, two conveying mechanisms are disposed in parallel with each other in the form of two lines on said base unit, one conveying mechanism is made to convey a pallet, on which said workpiece is placed, to said other-process parts mounting and assembling apparatus adjacent thereto in said predetermined conveying direction, and the other conveying mechanism is made to convey only said pallet to said other-process parts mounting and assembling apparatus adjacent thereto in a direction opposite to said predetermined conveying direction.

7. A parts mounting and assembling apparatus according to claim 1, wherein said body of said base unit contains, as said device, a control unit for controlling operations of said conveying mechanism, said positioning mechanism, said moving mechanism and said end effector.

8. A parts mounting and assembling apparatus according to claim 1, wherein said body of said base unit contains, as said device, an input/output unit functioning

as an input/output interface for interchanging a signal with respect to an external controller or a control unit of a parts mounting and assembling apparatus for other process.

9. A parts mounting and assembling apparatus according to claim 1, wherein said body of said base unit is constructed by disposing a fundamental frame having an H-shaped cross section along an axis of said body.

10. A parts mounting and assembling apparatus according to claim 9, wherein said fundamental frame constituting said body of said base unit is made to be connectable to a frame extension having an H-shaped cross section for extending said base unit.

11. A parts mounting and assembling apparatus according to claim 9, wherein said fundamental frame of said base unit is arranged and fixed on a ladder-type line chassis.

12. A parts mounting and assembling apparatus according to claim 10, wherein said fundamental frame of said base unit is arranged and fixed on a ladder-type line chassis, and said frame extension of said base unit is arranged and fixed on a chassis extension connected to said ladder-type line chassis.

13. A parts mounting and assembling apparatus according to claim 11, wherein a dovetail groove is made in said ladder-type line chassis, a movable nut is placed in said dovetail groove to slide along said dovetail groove, and said fundamental frame is fixed onto said ladder-type line chassis through the use of said movable nut.

14. A parts mounting and assembling apparatus according to claim 12, wherein dovetail grooves are made in said ladder-type line chassis and said chassis extension, movable nuts are placed in said dovetail grooves to slide along said dovetail grooves, and said fundamental frame and said frame extension are fixed onto said ladder-type line chassis and said chassis extension through the use of said movable nuts, respectively.

15. A parts mounting and assembling apparatus according to claim 11, wherein said fundamental frame of said base unit is arranged through a movable guide onto said ladder-type line chassis, and said base unit, together with said selected mechanism unit and said dedicated unit, is made to be drawn out in a horizontal direction perpendicular to said predetermined conveying direction from said ladder-type line chassis.

16. A parts mounting and assembling apparatus according to claim 12, wherein said fundamental frame and said frame

extension of said base unit are arranged through movable guides onto said ladder-type line chassis and said chassis extension, respectively, and said base unit, together with said selected mechanism unit and said dedicated unit, is made to be drawn out in a horizontal direction perpendicular to said predetermined conveying direction from said ladder-type line chassis and said chassis extension.

17. A parts mounting and assembling apparatus according to claim 1, wherein said conveying mechanism and said positioning mechanism in said base unit are integrated with each other.

18. A parts mounting and assembling apparatus according to claim 17, wherein said conveying mechanism and said positioning mechanism comprise an elevating/lowering mechanism for moving a pallet, on which said workpiece is placed, upwardly and downwardly and a pitch feed mechanism for moving said elevating/lowering mechanism together with said pallet in said predetermined conveying direction for positioning.

19. A parts mounting and assembling apparatus according to claim 18, further comprising a parts supply unit for moving a table, on which a parts supply tray is arranged, in said predetermined conveying direction or a direction opposite to said predetermined conveying direction, by

diverting components of said elevating/lowering mechanism and said pitch feed mechanism functioning as said conveying mechanism and said positioning mechanism in said base unit.